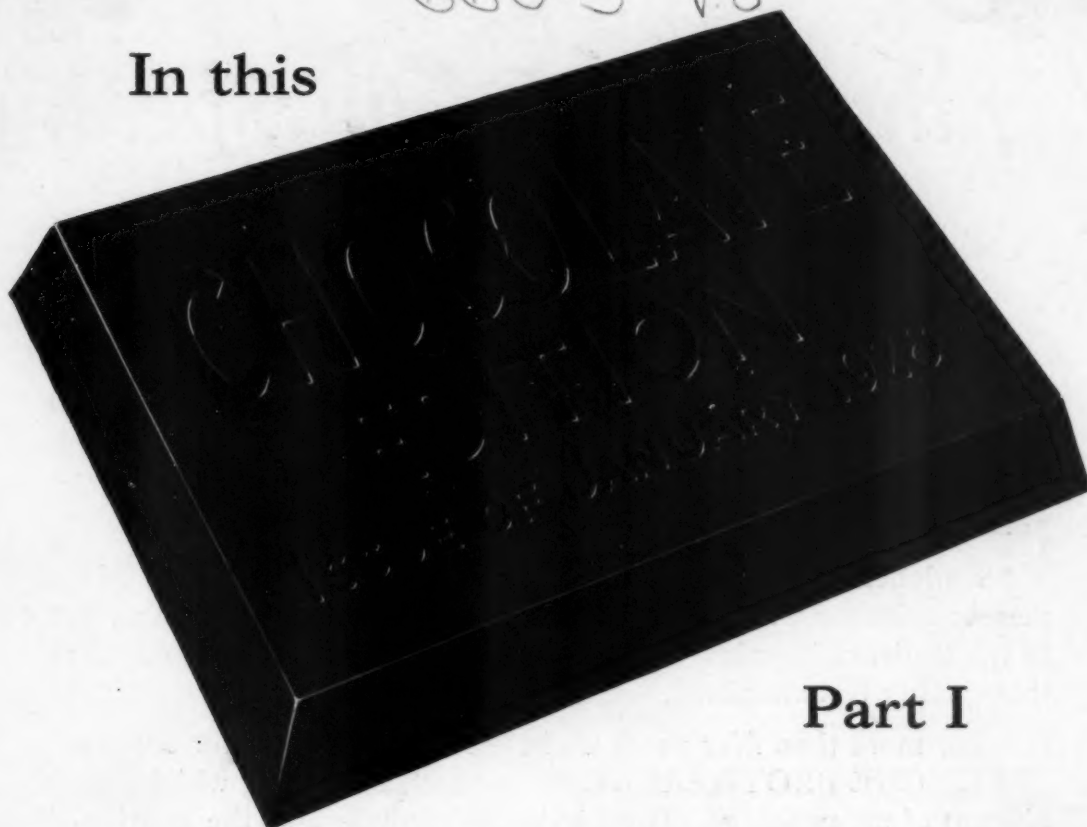


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WITH a great sense of satisfaction in our past accomplishments, we approach the year which is opening before us with a renewed spirit of determination for even greater and better service to our friends. For the cooperation which they have given us we hereby tender heartfelt thanks, joined with our most sincere wishes for a full measure of health and happiness for 1928.



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Editorial

ROBERT RANDOLPH, Editor

1928 and the New Mental Attitude

THE year through which we have just passed has provided one of the best tonics the industry ever had. It has done more to pull us out of our attitude of self-complacency than any development since the war.

The vice-president of one of the largest coating houses confided to us a few weeks ago that they had the finest research laboratory in the coating industry—with seven first line chemists and three assistants. He boasted that their recent scientific discoveries had easily put them three years ahead of anybody else in the field; but his words were hardly cold before Wilbur descended upon the Bureau of Chemistry and carried off Dr. Paine under their very noses. Reichart, who opened a plant in this country last month, laid great stress upon the perfection of a process for “windsifting” cocoa powder. But during the past year one of the largest American powder manufacturers has changed over his entire production to this method and it is understood that at least one other manufacturer in the big four group will be employing this principle within another month or two.

So, altogether 1927 has been a year of kaleidoscopic changes—the most important of which has been the revolutionary change in our mental attitude toward science. We have begun to recognize that we have many problems in common. That knowledge has laid the way open to a consolidation of interests which would not otherwise have been possible.

A dawning realization that our major enemies are *outside* of the candy industry is knitting us closer and closer together for self protection. We have learned that the competition of today and of the future is *group* competition rather than competition between the individuals in a common group—that a continued warfare is being waged between competing industries for a given share of the customer's dollar. The biscuit and ice cream groups are spending large

sums of money trying to develop new, hybrid products which will enable them to participate to an even greater extent in the markets of the parent or confectionery industry.

And unless we wish to surrender to the industrial newcomers the business which we have painstakingly built up over countless decades, we have absolutely got to match wits with them and compete in kind.

Fundamentally, there is no good reason why a frozen product like ice cream should be taken into our systems in midwinter. But the ice cream manufacturers, cooperating closely with one another through a central “research” or propaganda committee, are step by step building up their winter sales of ice cream. The ingredients of ice cream manufacture, barring the milk and cream which we also use in other lines, correspond more or less closely to the ingredients of our own marshmallow batch—sugars, flavors and stabilizers beaten up with air. The ice cream manufacturer sells his product in bulk and computes his sales in gallonage. Might not the candy industry develop a competitive product, modifying and decreasing the sweetness of his marshmallow formulas, mixing in fruits and flavors and selling it in bulk all the year round, to be served as desserts with chocolate and other sauces?—a product which might either be chilled before serving, served with hot sauces, or used as a major ingredient in salads of various kinds? We have long been bound by precedent. Will 1928 prove to be the year of our emancipation?

Candy in the Press—1927

THE press during the past year has taken what, on the whole, appears to have been a more favorable attitude toward candy. The statements of prominent physicians, dieticians, dermatologists, etc., cautioning against excessive dieting and giving candy a clean bill of health, have

been accorded a fair amount of space, especially since the quickening of advertising interest by the N. C. A. cooperative advertising campaign.

Prominent writers and cartoonists have depicted candy in a favorable light and these articles and cartoons have been syndicated all over the country.

The Sweetest Day campaign was a magnificent national gesture for the parent of the sweetstuffs industries to make—a fine display of advertising altruism which the public must respect even if it did not induce them to drop in at the corner store and buy a box of candy.

The effect of the N. C. A. activities is cumulative, and even if we should feel that they haven't set the world afire so far, we must remember that this ponderous machinery of publicity and consumer education has been in motion less than six months and it would have been incredible if they had accomplished more than they

have actually done in so short a space of time. Rome was not built in a day and it is only during the second and third year of such a campaign that we may expect to count the tangible results on the tape at the Cash Registers.

"They Don't Grow Up Like This on Lollypops!"

OF ALL the flagrant attacks upon the candy industry, this Wheatena ad is about the worst. The popular pastime of taking a slam at the candy industry must stop. It is the purpose of the National Confectioners' Association's educational campaign to see that it is stopped.

Sugar, the most concentrated energy food known, is thus indicted by "Wheatena." Why?—merely to satisfy their own selfish ends. We commend the advertising agency which wrote up this ad to the National Confectioners' Association.

The Old Gray Nightmare

BY ROBERT RANDOLPH

SHOULD you ask a chemist to define the problem of chocolate graying for you, most likely he will do one of two things: either he will pour forth a steady stream of super-technical words and phrases which are as nebulous to him as they are meaningless to you, or, if he has actually had a few personal encounters with the old tyrant, throw up his hands at the enormity and hopelessness of the task.

To the investigator whose perspective has been properly tempered by these personal experiences, the graying problem is a labyrinth of dead-end streets. Virtually every direction in which his previous researches have carried him has landed him unceremoniously on the front lawn of some other industry's pet problem. In this direction he is confronted with the seeming impossibility of creating a market for some new by-product which heaves in sight during the process of a manufacturing operation; and in that he stumbles into some sort of mechanical impasse which is already disturbing the slumbers of some of the country's foremost equipment engineers.

Graying is truly the candyman's nightmare; and, strangely enough, one which

does not particularly concern the large coating manufacturers, who seem inclined to let the coating buyer do the worrying. But from the largest candy plant to the smallest vendor's stand, no part of the confectionery industry can be said to wholly escape its ravages. Even the little printed inserts which the manufacturer trustingly puts in his package chocolates to forestall the customer's inherent prejudice, stand as mute evidence of a scientific failure. The customer is from Missouri. Alibi or no alibi, he knows them only for stale candies!

"Flying alone," as Col. Lindbergh did, is a great quality in adventure and romance. But it has proved itself to be poor practice in research work. If every one of us had to learn by individual experience the million and one things which come to us in childhood as the cumulative experiences of civilization, we would have to live to be Methusalehs in order to acquire a sufficient stock of knowledge to handle a second-rate foreman's job in a third-rate candy factory.

There appears to be no question in anybody's mind but that the chocolate graying problem will ultimately be solved. But

(Continued on page 47)



A drying platform (Trinidad). The native is "dancing" the cocoa with his bare feet. Observe the movable shed at the rear, which may be rolled over the platform to protect the beans from rains. (Courtesy, C. Schroeter, Inc.)

"Have We Lost Quality Consciousness for Fine Coatings?"

Asks Mr. Schildberger,

who analyzes the fine points of the flavor cocoas and their influence upon the finished chocolate

EDITOR'S NOTE—Of serious concern to the coating buyers throughout the candy industry is the indisputable fact that the average quality of low and moderate priced coatings has been noticeably impoverished during the past few years. This has been due in some measure to a series of unusual market conditions but to an even larger extent, to the general apathy of the coating buyers themselves.

This penny-pinching disregard for quality has not been without far-reaching consequences. The gradual approach to the "irreducible minimum" of raw material and production costs has made the majority of cheap coatings all look and taste alike. A price warfare rages constantly between the big producing factors, and contributes to the demoralization of the coating industry. The flooding of the mar-

ket with the cheapest of cheap coatings to be used on even cheaper bars and ice cream "pies" cannot help but alienate the consumer's confidence in chocolate as a treat to eat, and in this is written a sinister chapter in the bar goods problem.

Observe the market for raw cocoas. It is a valuable barometer to the well-being of the manufacturers and users of chocolate. The basic grades are in constant and active demand. Huge tonnages are turned over on description only, without the annoying ceremony of choosing parcels for the niceties of color and flavor which the manufacturers know seldom exist in these grades. One would think cocoa quality were as completely standardized as sugar.

The flavor grades, except for the desultory interest of a few manufacturers (mainly those who make coatings for their own use and consequently, are not knee-

deep in the price-slashing orgy), are completely neglected. The big coating manufacturers who used to buy Maracaibos, Javas and fine clayed Porto Cabellos in 3,000 to 5,000 bag lots, evince little or no interest in these grades today. Here and there you may be able to point out an exception, of course, but it is generally conceded that the fine quality business is slipping.

The price differentials between flavor grades and basic grades have declined to a point where it no longer pays to bring substantial quantities of fine cocoas into this country. Instead, they go to Hamburg and London, where they are appreciated. The proportion of flavor cocoa importa-

tions into this country is steadily decreasing to a point which might well cause the coating buyer to be alarmed at the prospect of destroying the taste of the American public for fine chocolate.

Will the return of bean prices to normal automatically correct this situation? Hardly. Some of the flavor varieties are little higher than they were before the squeeze. Only a concerted demand from coating buyers who realize why their business is slipping can change the picture and it is with the hope of creating a sensible "quality consciousness" in the buyers of moderate priced coatings that this illuminating article has been written.—EDITOR.

The Selection of Cocoa Beans for Chocolate Manufacture

by Adolph Schildberger

THE cacao tree, the seeds of which provide the chief raw material for the manufacture of cocoa and chocolate, belongs to the genus *Theobroma* in the family Sterculiaceae. The tree grows wild in many parts of the tropics, and is also cultivated on plantations in South America, the West Indies, Africa, and the East Indies. The cultivated variety (*Theobroma Cacao* L.) provides the beans known as "Flavor" cocoas in the trade.

The flavor cocoas include those beans which, harvested when ripe, thoroughly fermented and carefully dried, are characterized by a brown color, mild flavor, characteristic aroma, and a loose friable shell. These flavor cocoas are grown chiefly in Venezuela, Ecuador, Trinidad, Ceylon, Java, and Samoa.

The wild cocoas are harvested on the African Gold Coast, Lagos, Nigeria, San Thome, Cameroons, Fernando Po, etc.; in the interior of Brazil, and several of the West Indian islands, San Domingo, Haiti, Costa Rica, etc. These are known in the trade as "basic" cocoas.

The cacao tree came originally from tropical America, in the jungles on the continent, and the West Indies. The trees were cultivated on plantations in other lands, and as the seeds were carried about by animals and birds, eventually grew wild in these lands also. The

distribution of the cacao tree of commerce has therefore become very general, and it is found in nearly every tropical land which provides suitable climatic conditions for its growth.

On plantations, the trees are held down to a height of 18 to 21 feet as it has been found that at this height they give a richer crop of superior beans. The wild trees, on the other hand, reach a height of 40 to 45 feet, but the yield per tree is often not so great as from the smaller trees in the plantations.

The trees in the plantations are frequently cut down when they reach an age of 30 years, as their production drops off considerably thereafter. There are two crops a year, a main crop in June and a minor crop in December.

The freshly-harvested fruit is allowed to lie in the sun for three or four days to ripen thoroughly, after which the pods are split open with a machete, or knife. The seeds are separated from the pulp in primitive fashion. The meat of the fruit may be eaten, while the seeds, or beans, are put in sweat boxes or thrown into heaps on the ground and covered with plantain leaves.

Because of the high temperature induced in these confined heaps by the tropical sun, the beans immediately begin to ferment. This fermentation accomplishes a double purpose—the flavor of the beans is

improved by the chemical changes which take place, and the germ of the seed is destroyed. While the chemical changes which take place are not entirely understood, it is thought that the tannins are broken down into dextrose and cocoa red. This is a critical process in the production of quality cocoa, and the longer and more carefully it is carried out, the better will be the flavor of the beans, as the bitter principles which are present in the raw bean will then be entirely broken down.

The beans are next dried, a treatment which also plays an important part in the excellence of flavor obtained. Drying is accomplished by spreading the beans in layers on platforms in the sun. During this process, they must be constantly protected from rain and from dew to prevent the development of a bitter or mouldy taste. Insufficient drying, and the practice of transporting and trading in the beans on a wet, or semi-dry basis, is the cause of must, mould and many other chronic defects of African cocoas, but on the other hand, if the drying process is carried too far, the beans lose volatile oils which are essential to their flavor, shrivel up and break very easily. The final stage in the process is to bag the beans and send them to market.

Before describing the individual characteristics of the different varie-

THE SELECTION OF COCOA BEANS

ties of cocoa, it would be well for us to consider the features which serve to distinguish between ripe, well-fermented beans, and unripe, poorly-fermented beans. A thoroughly ripe bean is round and plump and it has a kernel which is loose in its shell, so that it is often possible to break the bean between two fingers. Such beans have a mildly bitter taste, with the characteristic chocolate aroma. The butter pressed from ripe beans is hard, brittle, and has a higher melting point than that pressed from unripe beans. In unripe beans, harvested too soon, or improperly fermented, the kernel clings to the shell. Such beans are generally flat, and have many defects and imperfections. The color of the cut surface of the nibs is not brown, but violet, purple or gray; the taste is strongly bitter, or even sour, and the aroma is weak or entirely lacking.

Butter pressed from these beans will be of a pasty consistency and have a lower melting point which in turn means quicker graying of the coating it is used in. Butter of this character frequently possesses a sharp taste which renders it unfit for use in milk chocolate, or in mild-flavored sweet chocolate.

It will readily be seen, therefore, that it is desirable for a manufacturer to purchase only ripe and thoroughly fermented beans, as only ripe beans can produce a chocolate or butter of good quality.

When market conditions are such

that only insufficiently fermented beans are obtainable, it is possible, and at times highly desirable to salvage them by subjecting them to a second or after-fermentation in the chocolate factory before they are roasted and made into coating. It accomplishes the breakdown of the tannins, the removal of volatile acids, and brings about a general improvement of flavor and enhancement of aroma. Many grades of beans are *chronically* undercured, and it may be desirable to carry out such a treatment regularly on these grades.

For the benefit of coating manufacturers who are not familiar with this procedure, the following is inserted by way of explanation. A certain amount of space is required for the operation, but the supervision and time factors are brief and adequately repaid by the enhanced value of the finished product.

The beans are placed in a large wooden trough, and about 15 per cent of warm water poured over them. They are permitted to soak up this water for from 24 to 36 hours, during which time the fermentation is carried to completion. The beans are then dried at about 110 degrees F., or may be roasted immediately to avoid the additional operation. Drying before roasting is preferable, however. By means of this after-fermentation, the original flavor may be vastly improved, and the chocolate given a good brown color which it might not otherwise have possessed.

There is an instance on record of where a dealer successfully sophisticated Maracaibo cocoa with Sanchez which had been swelled up and given an after-fermentation. The adulteration was not discovered for a considerable time owing to the excellent appearance and break of the "improved" Sanchez. The flavor, of course, was lacking, for quite obviously, the fermenting process was powerless to make the mixed in beans any better than that particular variety would have been had it been given a proper fermentation in the first place.

Geographically, we may divide cocoa beans into the following major groups: America, African, Asiatic, and South Sea Islands. In commerce, the beans may be known either by the name of the land in which they are grown, or by the port through which they are shipped. As an example of the latter, the name "Bahia" is applied to all beans originating in that part of Brazil which uses the port of Bahia for its export.

A closer acquaintance with the more important varieties of beans and a knowledge of what they do to a cake of chocolate should prove of value not only to the coating manufacturer but to the buyer who is being paid to buy flavor value, distinctiveness and customer satisfaction in the finished product. Following are the earmarks by which these different varieties may be readily identified and the class of work to which each is best adapted.

American Types of Cocoa Beans

(a) Mexico

Soconusco—Grown in the state of Chiapas, this cocoa is recognized as the very finest cocoa produced anywhere in the world. The beans are large and convex, very rich in fat, and possess a very sweet and aromatic flavor. The crop is limited and because American manufacturers refuse to pay the price, they go to a handful of English manufacturers who appreciate the quality. None of them find their way into this market.

(b) Venezuela

Superior Caracas—Resembling *Soconusco* in many of its properties, this very fine type of bean is useful in all grades of chocolate coating, including the best. It produces a high grade of cocoa powder, and furnishes a good yield of cocoa but-

ter. It gives chocolate a good aroma and flavor.

The beans are full-meated, with red-brown shells which are frequently covered with an earthy layer. The size is about 23 mm. long by 15 mm. wide, and 8 mm. thick. The count is approximately 16 per oz. Caracas cocoa is sometimes adulterated with the seeds of the tree *Theobroma Bicolor Humboldt*, very different in appearance from the true Caracas bean. This cocoa is shipped from the port of Caracas.

Porto Cabello—Because of its higher price can only be used in the better grades of coatings, to which it imparts a particularly fine aroma and flavor. Especially useful in making a liquor to be consumed in chocolate drinks, because of its mild

but definite chocolate character.

The beans are large, egg-shaped, and seldom flattened. The shells of the better grades have a coating of ochre-yellow clay, remaining from the original fermentation and the beans are thus known in the trade as either "clayed" or "unclayed." In cross-section the beans are about 24 mm. long, 15 mm. wide and 8 mm. thick, the average weight being about 22 per ounce. When examined under the microscope, violet pigment cells are seen, which are so transparent, that it is possible to see the underlying cells.

This is one of the finest types of Criollo cocoa obtainable in this country. It is shipped from the port by the same name.

Carupano—A variety shipped from the Venezuelan port of the

same name and known locally as "Trinitario" because the seeds were originally brought from Trinidad. It is the poorest quality of Venezuelan cocoa.

Trinidad Caracas is east coast Venezuelan cocoa shipped by way of Trinidad. Its yield of cocoa butter is better than LaGuayra but not so good as superior Caracas. In other characteristics it compares more or less favorably with the latter.

La Guayra Caracas—A poorer quality of Caracas shipped through the port of La Guayra. The beans have a distinctly acid character, and are somewhat woody; consequently they are not suitable for milk coatings, on the one hand, nor for butter-pressing, on the other.

Maracaibo—Maracaibo Cocoa is an excellent type, especially useful in milk chocolate because of its fine, mild flavor. It imparts an excellent flavor and aroma to liquors intended for consumption in chocolate drinks and is used in the finest coatings. The beans are of medium size, bold, and possess a smooth, light red-brown shell. They often have a slight covering of earth similar to that on Arriba Cocoa.

(c) Ecuador

From Ecuador, where the first cocoa cultivation is believed to have been carried out, many varieties are exported under the general name of Guayaquil Cocoa. Classified roughly according to their desirability for chocolate manufacture, they are Summer Arriba, Naranjal, Esmeralda, Season's Arriba, Balao, Caracas, and Machala, and the very dark and least desirable—Tenguel.

Arriba—Possesses the most pronounced aroma or bouquet of any cocoa, and is very characteristic. The superior grade of Arriba cocoa should be in every formula for quality chocolate, to which it gives the bouquet so desired. Of the two crops reaching the market, the summer crop is by far the better quality, in fact, the only one for a high class manufacturer to use. Beans of this variety possess only a slightly bitter taste, are extremely large, and with an irregular frac-

ture. The color varies from a light yellow brown to a dark brown, and the beans are often covered with a thick coating of earth. The seed-germ is dark brown on the outside, slightly lighter on the inside, and in this variety there is noticeable a film of mineral coating. The average length of the red summer bean is 24 mm., breadth, 15 mm., and thickness, 6 mm. The average

contain some of the better-looking Machala and even quantities of small, round Balao beans. It possesses little aroma and should only be used in cheap coatings.

Machala—Has likewise suffered through this impoverishment of Season's Arriba. Normally, it is less desirable than Arriba cocoa because of its bitter taste. It blends well with other beans, but should be used sparingly in a chocolate blend. The beans are considerably flatter than Arribas, with irregular shapes, and dirty black-brown shells. The seed-germs are dark brown on the outside, slightly lighter on the inside, and possess a bitter taste. The cells on the rim of the kernel are brown. Nearer the center are large masses of yellow-brown cells. Size—22 mm. long, 13 mm. wide, and 5 mm. thick; average count—24 per oz.

Caraquez—From the province of Manabi and port of Caraquez. It resembles Machala both in quality and appearance.

Esmeralda—Consists of small convex, very heavy beans of a dark yellow color. Like Arriba, it possesses a strong aroma and gives to chocolate a fine bouquet. It is only produced in small quantities, and is not often found on this market.

(d) Colombia

Colombia—As Colombia now consumes more cocoa than it produces, various taxes and fines are levied to prevent exportation. Consequently very little Colombia cocoa reaches the U. S. The descriptions are included as a matter of record.

Santa Martha—Coming from the state of Magdalena in Colombia, this cocoa is very similar to Maracaibo in appearance and flavor. It can be used in the same ways as Maracaibo.

Petrasa—Identified by its large, thin-shelled beans, with dark red-brown kernels. This cocoa is seldom sold under its true name, but is substituted for Guayaquil cocoas, which it resembles in appearance, if not in quality. Petrasa has a very sour and tart taste, and should only be used after giving it an after-



(Courtesy, C. Schroeter, Inc.)

An unusually good close-up showing how the cocoa pods grow directly out of the tree trunk.

count is slightly over 20 per oz. Many dark violet pigment cells are visible when the cut surface is viewed under the microscope.

Next to Summer Arriba in desirability for chocolate manufacture is Naranjal. The minor Arriba crop, known as Season's Arriba, is no longer of the high quality standard of former years, having been grossly adulterated with low grade seeds of other varieties. On examination it will frequently be found to

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TRINIDAD	July-Nov.	Dec.-May
LAGUAYRA	Sept.-Dec.	Jan.-Mar.
PTO. CABELLO	Sept.-Dec.	Jan.-Mar.
GUAYAQUIL	May-Aug. Summer Crop	Sept-Apr. Winter Crop

fermentation, as previously described.

Angostura—Similar in appearance and uses to *Petrazza*.

(e) The Guianas

Surinam—While ordinarily of very poor quality, some well graded lots of this cocoa reach the market. The better grades are large, round, swollen beans of light gray color, covered with a layer of light gray dust. The kernel is dark red-brown and has a bitter taste. The seeds are 22 mm. long, 12 mm. wide, and about 6 mm. thick, the count being around 20 per oz. The pigment cells are of an orange-red color. Because of its strong tannic acid taste, *Surinam* cocoa can be used only in small quantities in blends.

Berbice Cocoa comes from British Guiana, and is perhaps the richest in butter of all cocoas. It is useful therefore in coatings in which a high butter content is needed, and gives chocolate a good aroma and flavor. The beans are small and round, with a gray colored shell, generally covered with a layer of gray dust. The shell is easily removed by the hands. The kernels are black-brown to red-brown in color, with a very weak aroma. When mixed with *Caracas*, a large amount of sugar can be used, and the taste of the sugar is not so noticeable. This cocoa is usually shipped as *Surinam*.

Essequibo, also from British Guiana, is similar to *Berbice*. The shells, however, have more of a reddish color, and the beans are larger. The kernels are of a dark red-brown color, and have a slightly bitter taste. The shell clings to the nib more than *Berbice*. Because of the bitter taste, smaller amounts should be used than with *Berbice* cocoa. This grade is likewise shipped as *Surinam*.

Cayenne—From French Guiana, occurs in smooth, long beans, gray brown in color, very hard, with no dust layer. The nibs are a dirty, bluish-red color, very poor in fla-

vor, but have a high fat content. This type should be avoided if possible. It can only be used in the manufacture of cocoa butter, and is not much good even for that. This and the kindred variety, *Oyabock*, are seldom seen in this country.

Oyabock—A variety of *Cayenne*. Sometimes slightly better in quality. Has brilliant red colored beans, quite full and round. Also characterized by its high fat content.

(f) Brazil

Maranon resembles *Guayaquil* cocoas, has less value, but is largely used in Europe. The beans are small and flat. One side of the bean is straight, while the other is decidedly convex. The shell is dark red, spotted with darker red. The kernels are dark red, violet, or brown. This type of cocoa is high in fat, possesses a moderately bitter taste, and when well sorted can be used to advantage in cheaper coatings. Unfortunately, many shipments contain a large percentage of unfermented beans, which lower its value considerably.

Para—Somewhat similar to *Maranon*, but the beans are smaller and slightly darker in color. It has a good butter content and frequently possesses a bitter after-taste, which makes it of little value in chocolate. The upriver grades are of better quality and may be used in cheaper chocolate blends. They are quite characterless; consequently, may be employed to advantage as a blending or stretching agent, for which purpose they are widely used in Canada.

Bahia—Formerly held in low esteem because of its low fat content, *Bahia* cocoa has steadily improved to a point where the butter yield of superior *Bahia* is only exceeded by *Accra* and *St. Thome* among the commercial basic cocoas.

Bahias are obtainable in widely different qualities, being marketed under three grades, superior, good fair and fair fermented. The quality of each grade, and the size of the

beans fluctuates greatly, but the beans are mostly egg-shaped or three-cornered and generally swollen around the edges. Both the good fair and fair fermented are sweeter than superior, which is very acid, owing to fermentation. For this reason, the former are now regarded as more satisfactory as a neutral base cocoa for chocolate work; the latter for butter pressing and cocoa powders. The superior grade has dark cinnamon-brown shells with somewhat lighter brown-violet kernels. The ordinary grades have dirty gray shells, coated with a gray earthy film. The kernels are black-brown in color. *Bahia* cocoas are at their best in the manufacture of cocoa powder, to which they give a rich color. They should be in every blend employed for this purpose.

As a fourth Brazilian type, *Rio Negro* might be mentioned, but it is of poor quality, and seldom need be considered.

(g) West Indies

Trinidad—Formerly one of the best types available, during late years, through carelessness on the plantations and adulteration with *Theobroma Forastero* in the wild cocoa, this variety has materially depreciated in quality. The best grades of plantation *Trinidad* are true *Theobroma Criollo*, and are characterized by a light brown color and mild flavor, which make them particularly suitable for milk chocolate. The beans are large, wide, and flattened. The seed-germ is black-brown. The shell is yellow-brown, and breaks away very easily. Average size—25 mm. long, 18 mm. wide and 4 mm. thick. The tissue of the cotyledon is dirty gray-brown. Estates *Trinidad* has a darker, red-

Customary Tare Allowances on Cocoa Beans

Accra and St. Thomé		Actual
Bahia	1 lb. per bag	
Para	1%	
Grenada	2%	
Trinidad Caracas		
Guayaquils		
Haiti		
Sanchez		
Trinidad		
Jamaica	2 lbs. per bag	
Surinam		
La Guayra Caracas		
Maracaibo		
Pto. Cabello		



The world's largest cocoa shipping port—Accra, Gold Coast Colony

brown shell and is more acid in flavor.

Port au Prince (or Haiti cocoa). The beans are flattened ovals, the shell being light brown, and the seed-germ a uniform black-brown. The taste is not very bitter. Average length, 23 mm., 14 mm. wide, and about 4 mm. thick. When the cut surface is viewed under the microscope, large quantities of pigment cells of irregular size are visible. The larger cells are colored dark violet, and the smaller are light red-violet. This type of bean can be used in small amounts in the cheaper grades of chocolate, but does not impart very much character to the chocolate.

Sanchez (also known as Samana and Domingo) occurs in very irregular beans, flat, three-cornered or oval-shaped. The shells are almond-brown in color, and the taste is very flat and characterless. Runs high in fat and is useful as a base in milk

San Thome, also that grown in the Principe Islands and Fernando Po, consists of flat, oval, black-brown beans. There are three commercial grades, Superior (best), Paiol (prime) and Escolha (ordinary). This bean is very popular in Europe, and is largely used in making the cheaper grades of chocolate. Its outstanding characteristic is its high fat content, and a strong tannic acid flavor.

Accra—While ordinarily used in

chocolate blends, because of its mild flavor and light color.

Martinique cocoas and those derived from Guadeloupe are very small, slender beans with a thin shell and a brownish-red nib. These varieties are known for their high fat content. They have a fairly good aroma and flavor. They may be used in coatings, especially where a high butter content is desirable.

Cuba—Seldom seen in this market, and of relatively little value. The beans are irregular in size, most of them are small and flat, and cling to their shells.

Asiatic Types

The number of varieties grown on the Malay peninsula is very great. However, only two varieties reach this market, Ceylon and Java. Both types are extremely valuable and may be classed with the finest types obtainable. Some cocoa is also grown in the Philippine Islands, which may reach this market at

some future date. It bears promise of being very useful as a flavor cocoa.

Ceylon—Consists of moderate-sized beans, oval, seldom flattened and easily broken. The thin, easily removed shell is reddish brown, the kernel is red-brown on the inside, and light brown on the outside. It is characterized by a mildly bitter and not unpleasant taste. Ceylon is, perhaps, the cocoa best suited for milk chocolate, particularly because of its light color.

Java—Similar in quality to Ceylon, but even lighter in color, has an exceedingly light shell and is the lightest-breaking cocoa obtainable. The beans are more angular than Ceylon and the shells are brown, with kernels of the same color. Because of its light color and fine, mild chocolate character, this cocoa is prized for the highest grades of coating. It is particularly suitable for milk chocolate.

African Types

cheap coatings strictly as a base or filler, if properly fermented and of the best quality, it possesses a good aroma, and can be used to advantage in medium-priced coatings. This cocoa dominates the world cocoa supply. It has a high butter content and responds beautifully to an after-fermentation. Accra cocoa as received in this country is seldom entirely fermented. The shells are light brown in color, and very hard. The kernel is dark brown in color,

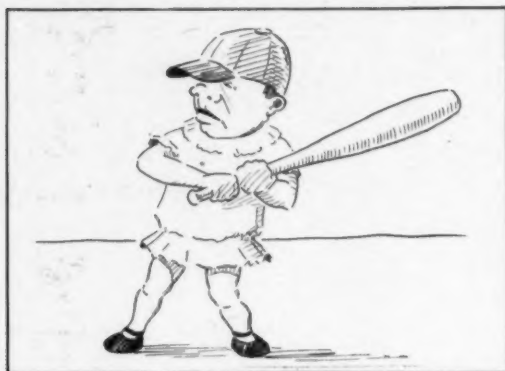
and possesses a very bitter taste when raw.

Cameroon—Similar in quality to American types. As this is a cultivated cocoa, it is likely to improve as time goes on. Cameroon cocoa consists of moderately large convex beans with cinnamon-brown shells and violet kernels. It is very useful in all of the better grades of coating and in bar chocolate. Because of its dark color, however, it

(Continued on page 51)

PUZZLE PICTURES—Each depicts a well-known candy bar

No. 5



No. 6



You know them, of course, what are they? (Answers in next month's issue.)

Ask Me

Each month our Contest Editor asks ten or more questions dealing with subjects of practical and scientific interest to the superintendents, purchasing agents, sales managers and general executives of candy plants throughout the country.

This Month's Brain Teasers

Question 1:

Why do chocolates, which are exposed to unfavorable temperature and humidity conditions, turn gray?

Question 2:

What are the relative flavoring strengths of ethyl vanillin and methyl vanillin? (Do you know which of these you are using?)

Question 3:

Why are some cocoa powders termed "soluble" while others are not?

Question 4:

Name the country from which we obtain each of the following varieties of cocoa bean: (a) Navidad, (b) Caracas, (c) Sanchez.

Question 5:

What are the first ingredients on record as having been used to flavor chocolate?

Question 6:

What is meant by "dancing" as applied to cocoa beans?

Question 7:

How does aging affect chocolate coatings?

Question 8:

What gives cocoa its tonic properties?

Question 9:

Do acids "grow," and of what significance is this fact to the chocolate industry?

Question 10:

How do the following materials function to retard the graying of chocolates: (a) Malt extract, dextrins, etc.; (b) High melt fats?

Answers to December Puzzle Pictures

No. 3—Love Nest (Euclid Candy Co.)



No. 4—Leaping Lena (Bonita Co.)



Answers to December Questions

1. *What causes the solid fondant in cordial fruits to turn liquid?*

Ans. The acid of the fruit inverts the sucrose to invert sugar, which is so much more soluble than sucrose that a syrup is formed from the cream.

2. *Name an important product of the Straits Settlements which is widely employed in the candy industry.*

Ans. Tin, in the form of tin foil.

3. *Name four conditions to be met in connection with the use of moulding starch in marshmallow work.*

Ans. The starch must be clean, dry and at bloodwarm temperature before casting. Separate boards should be used for marshmallow work.

4. *Where is sand used in connection with the marketing of hard candy?*

Ans. In the manufacture of glass jars, which are used in their packaging.

5. *What is meant by "air flotation" and what is its application in the chocolate industry?*

Ans. Air flotation, or "wind-sifting" as it is more commonly termed, is a newly adapted process by which cocoa powders are sifted in a whirling column of air, the lighter and finely-divided particles being drawn off at the top of the column and the coarser and heavier particles remaining at the bottom of the column, where they are returned for regrinding.

6. *What natural and permanent unit of length was established by the Seventh International Conference of Weights and Measures at Paris last September as the fundamental standard with which to define henceforth all measures of length throughout the world?*

Ans. The Conference tentatively adopted the proposition of the United States to define the international meter in terms of the wavelength of the red radiation of the cadmium lamp. (1 meter = 1,553,164.13 waves.)

7. *What is the most desirable temperature at which to maintain the corn syrup supply in a tank and pipe line installation? Why?*

Ans. About 90° F. At lower temperatures, the syrup becomes thick and difficult to handle. At higher temperatures, it tends to discolor. (See "Corn Syrup via Pipe Line" in December issue.)

8. *What rapid method for making milk and cream tests has recently become available?*

Ans. The Gerber test.

9. *What is meant by the Specification "No. 60 board" as applied to chip or news-board for boxes?*

Ans. That there are 60 sheets of a given size to a bundle weighing 50 lbs.

10. *Name two important factors, other than price and quality, which must be considered in buying cords and twines?*

Ans. The yield in yards per pound, and the breaking strength.

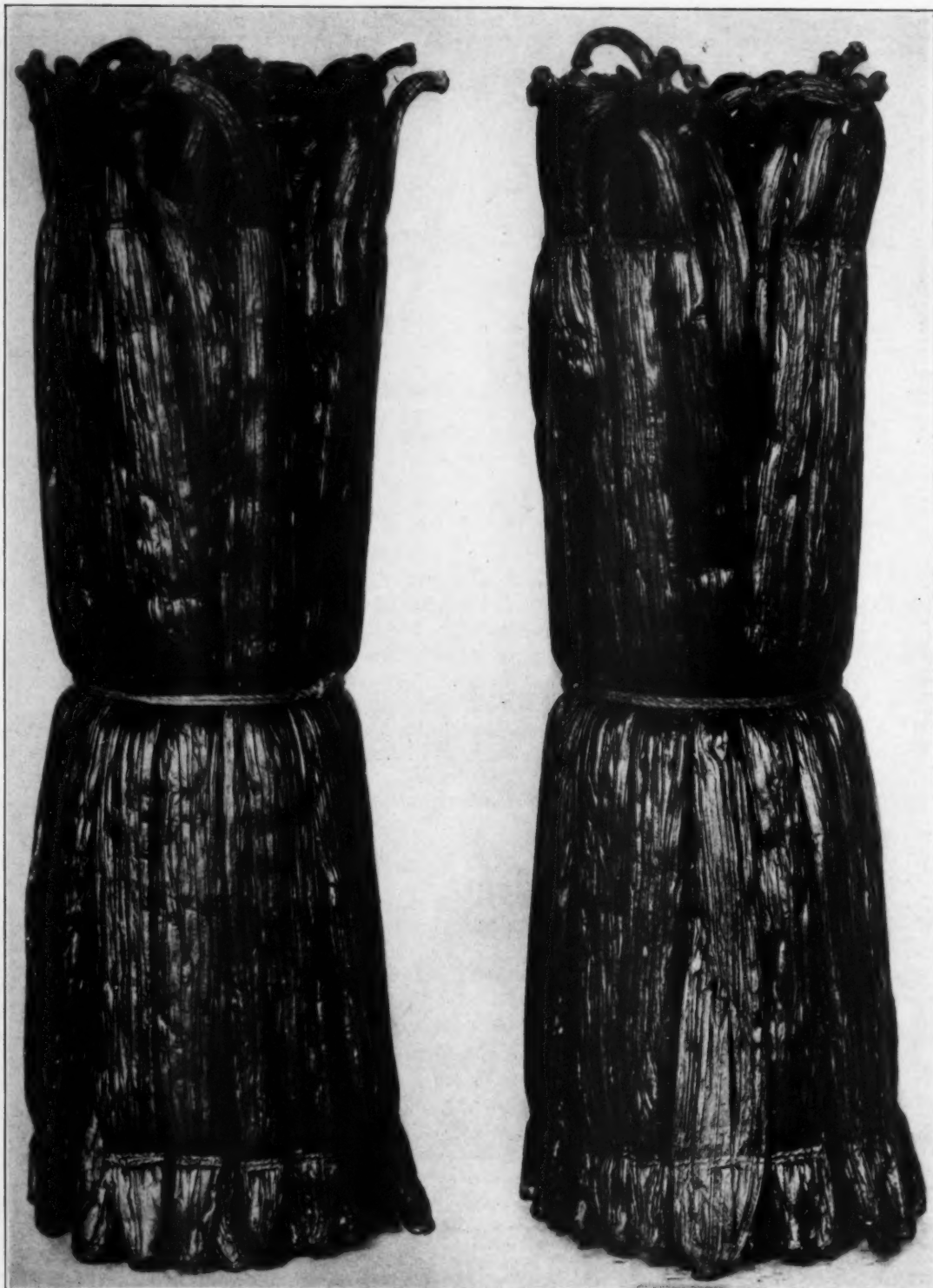


Plate 1

Full size, unretouched photo of two fine specimens of Bourbon "Firsts." The tight strings and fleshy appearance of the beans are characteristic of newly-arrived lots which have not yet dried out sufficiently to become crystallized. Note how the broad, plump beans are in striking contrast to the thin specimens in Plate 6.

(Staff photo)

Who Gets "Lot X?"

This series of six articles started in September issue, 1926, with an article entitled "From Montezuma to the Modern Confectionery Factory."

A Few Practical Suggestions on How to Examine Vanilla Beans

A series on **Vanilla and Vanillin**

by
A. Adams Lund



EXAMINING vanilla beans has come to be regarded as the special province of a handful of practical vanilla men whose experience, keen observation and long association with the product have made them especially competent as vanilla experts. However that may be, the average layman who buys vanilla, whether he be the all-around buyer or the over-worked superintendent of the candy factory, does not always have at his immediate "beck and call" the services and counsel of a vanilla expert. In fact, there are only about three or four of these authorities in the whole United States, hence it is doubtful whether very many persons could obtain the benefit of their services regardless of financial or other considerations.

The rank and file of occasional vanilla bean buyers and those in the plants who are charged with inspecting the beans when they arrive, must depend upon their own meagre and perhaps, unfortunate, experiences to guide them, with a word or two here and there from a poorly-trained and not wholly disinterested salesman.

A number of persons who read these lines will ask why, if they have confidence in the integrity of the house they are doing business with, it should be necessary for them to worry about the quality of the goods anyway. "So-and-so is a good, old, reliable house. I am quite sure they wouldn't put anything over on me."

Deliberately, they might not, but to anyone who has had the privilege of seeing how the immense quantities of vanilla are handled, "mistakes" of the worst sort are not only possible, but highly probable. If you have seen, for instance, one man superintending four floors in one of the largest vanilla grading establishments in New York City, including all the operations of examining, repairing, rebundling, sorting and incidental bookkeeping, it would at once be apparent that no matter how expert that one man was, he could not possibly give your order his personal attention.

Instead, he has foremen under him, the same as you have in the candy factory. He must to a large degree rely upon the judgment of others who are not so expert. Now, a slip-up of only one grade on a thousand pound order will cost you from \$150.00 to \$200.00 at current differentials. If you are a substantial user, this runs well into money. And don't think that this doesn't happen frequently! Many a man is paying for firsts, or "prime vanilla" as he calls it, and getting seconds down.

The number of prime lots from any crop is necessarily limited. If every manufacturer demands firsts, it would be impossible to fill their orders. And so, believing perhaps, that the buyer's insistence upon firsts is merely a gesture designed to cover up his ignorance concerning the grades, even the biggest and most responsible dealers in the game succumb to the temptation to deliver a grade which their experience has taught them to

BIBLIOGRAPHY ON THE VANILLA SERIES

1. *From Montezuma to the Modern Confectionery Factory*, September, 1926.
2. *From the Vine to the Curing Station*, October, 1926.
3. *Methods of Curing Vanilla Beans*, November, 1926.
4. *Grading and Packing Vanilla*, December, 1926.
5. *Pointers on the purchase of Vanilla Beans*, May, 1927.
6. *Who Gets Lot X*, January, 1928.

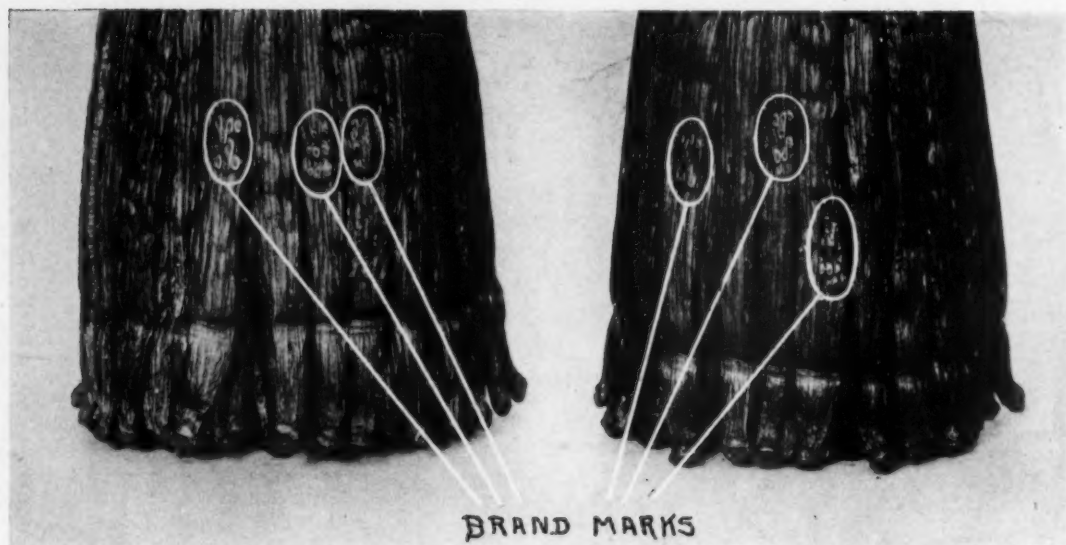


Plate 2

The "healed over" pin pricks visible in the lower central portions of these bundles are not scabs or warts, as is frequently supposed, but brand marks applied to the fruit by the natives while it is still on the vine. Each little arrangement of pin pricks is a trade-mark designed to prevent "light-fingered" persons from marketing stolen produce

be eminently satisfactory for manufacturing, even though it should "happen" to be a grade or two grades lower than that which the purchase order calls for. The beans work out all right but the unsuspecting manufacturer pays a bonus of 15 to 25c for his ignorance of quality.

The characteristics of the different gradings have already been enumerated and discussed in previous chapters of this article. The important thing now is to identify these "earmarks" so that we will know them when we meet them in a bundle of vanilla.

The Practical Examination of Vanillas

The Question of Size

Size is regarded as a very definite indication of the development and maturity of the fruit, and hence, indirectly, of its richness in flavoring essentials. Size means not only the length of the beans but their broadness and plumpness as well.

Take a ruler and determine the average length of the bundles. Your delivery will probably consist of an *assortment* of lengths, which is quite customary and not objectionable so long as the range or average length corresponds with the grading you are paying for.

"Prime" Mexicans should run from 6½ to 9½ inches, very fancy lots occasionally touching 10 inches in length; "Good" and "Fair" qualities will usually measure up around 6 to 7 inches.

Bourbon "Firsts" should run from 6½ to 8½ inches, seldom under 6½. "Seconds" will be anywhere from 4½ to 7 inches long; "Thirds" will average 4 and 5 or 6 and 7 inch lengths, and the lowest grades, the "Ordinaries" and "Inferiors"

take in all sizes, down to 3½ inches.

Provided length had no other significance, it would still be obvious that long beans contain a smaller proportion of the ends (the hooks and peduncles) than short beans. These ends are more or less woody and contain very little of the vanilla flavor. As a matter of fact, a few of the better extract manufacturers claim that they discard them in making their top qualities of vanilla extract.

Now take a good look at the beans in the center of the sample bundle. Are they thin and scrawny or good, broad, healthy beans all the way through the bundle? Next squeeze or roll the middle of the bean between the thumb and forefinger. Does it feel plump and meaty, or as though the two skin surfaces were rubbing against one another with nothing in between? It is this "meat" (the vanilla resins) which furnishes us with most of the vanilla flavor and not the tough, fibrous skin of the pod. If there is still any doubt in your mind as to whether there is enough of this precious



Plate 3

Two grades of commercial synthetic vanillin. Compare these with the natural vanillin crystals on the beans in Plate 5

flavoring material present, slit open a few of the beans with the sharp point of a pen-knife and see just how much or how little of the resins the beans contain. "Seconds" are never so well filled out.

An old trick was to insert a "button-hook" affair down lengthwise into the bean through a tiny hole near one end, and to scrape or pull out a small portion of the coveted resins from each bean. It is doubtful whether this particular form of chicanery is still practiced but the fact that such a laborious procedure was at one time considered profitable stresses the importance of this factor in examining deliveries.

Size being an important factor in grading vanillas at the source, we must insist upon strict adherence to the grading specification if we expect to get what we pay for.

Aroma

It is customary to smell the small or butt end of the bundle, as it is at this end that trouble usually starts. Many buyers thrust the nose right down into the beans and certainly not much is apt to get by them when they do this. However, it is possible to bring out all the odors by merely warming the bundle in a confined space, in the paper wrapper, for instance. Continue warming the bundle until the perfume and any foreign odors which may be present, come out strong and pronounced.

The beans should have a *smooth, strong, vanilla perfume*, free from any suggestion of

Mould, or must

Lice

Cheese (caused by mites or lice)

Rot, or odors of decay

Sour, or fermentation odors

Creosote (recured beans have a poor aroma, bearing a slight resemblance to creosote)

Heliotrope or *new-mown hay* (admixture of inferior varieties).

All of these odors are readily identifiable and if you should happen to detect any one of them in a delivery, lose no time in reporting it to your supply-house, so that they may recall it or send one of their men out to examine it immediately.

You buy vanilla only for its bouquet; destroy that bouquet and you have nothing left.

Soundness

A good, sound, healthy bean is soft and pliable, but not mushy. Prime beans are rarely hard-cured and brittle. If a number of the hooks have broken off, the lot has probably been recured. Recuring and re-bundling are also indicated by the presence of string marks on beans which are in the center of the bundle or where the string marks on the outside layer of beans is uneven.

The recuring is ordinarily accomplished by first treating the beans with alcohol to remove objectionable odors, etc., then putting them through an oil and molasses treatment or subjecting them to hand-rubbing with Balsam of Peru or Balsam of Tolu to make them supple and impart to them the greasy appearance of prime

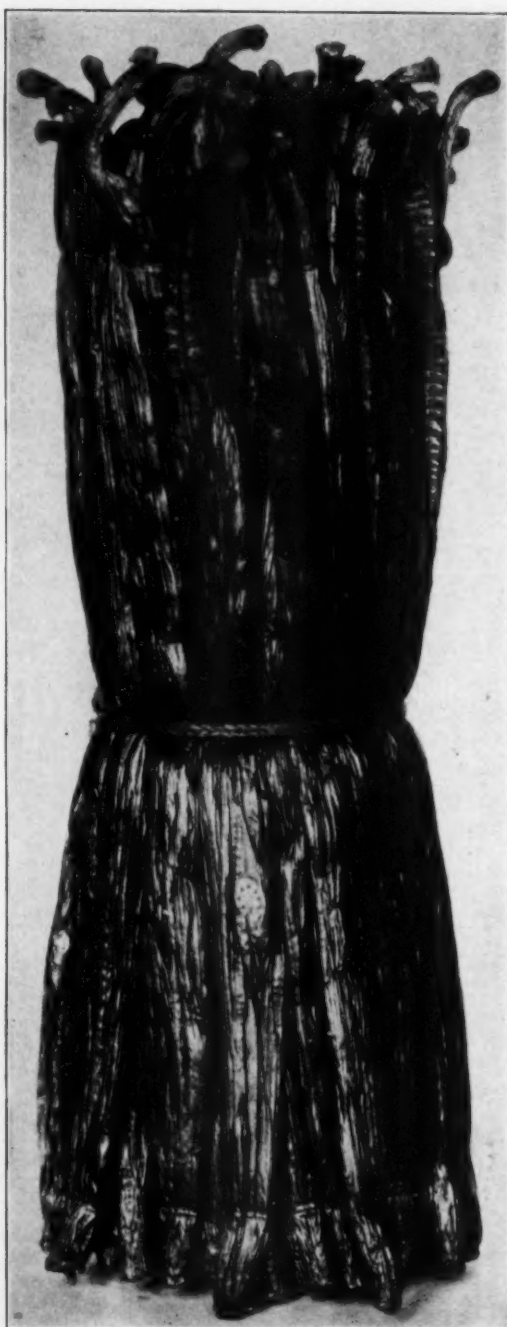


Plate 4

Observe the scabs and warts on the upper ends of these two bundles. In some instances they extend 3 and 4 inches along the length of the bean. Such blemishes are usually the result of bruises or tree scars received by the fruit while on the vine, and subsequently healed over. There should be few or none of these imperfections in prime or first quality vanillas

beans. The balsam adds a pleasant note (?) to what remains of the vanilla fragrance and serves to cover up the evidences

of infestation or decay.

The beans should be looked over very carefully for the following defects:

GREEN MOULD—Readily visible to the naked eye on close examination.

BLACK MOULD—A very hard type of mould to discover without the aid of a microscope. Usually forms on the butt ends of Mexicans. About the only way for the average buyer to detect it is by its very musty odor.

WHITE MOULD—Readily visible but often difficult to distinguish from the regular or sandy type of vanillin crystal, and from the "frost" which forms on beans like dry Madagascars.

MITES—Readily detectable under a microscope if one is available. Small ends of the beans have poor and characteristic aroma. If the mites are fairly plentiful, a cheesy substance will also appear. This form of infestation is possibly more common in Mexican than in Bourbon vanillas.

Color

Prime beans possess a waxy or greasy dark chocolate color. The lower grades run off to the reddish browns and are often streaked. Color is an excellent indication of the amount of moisture in the beans and since the maturity and development of the pods determine the extent to which it is necessary to dry the beans in order to preserve them and bring out their perfume, we may regard the color of the sample as a further indication of quality.

Moisture

The presence of excess moisture denotes improper curing. The beans are likely to mould and decay unless handled with great care.

A few per cent of added moisture may defray the expenses of the ocean voyage from Marseilles to New York. The customer pays for vanilla and gets water.

First quality Bourbons normally contain around 20 per cent of moisture when they arrive in this country, but occasionally this runs as high as 30 per cent. If you are equipped to make a regular moisture determination when the goods arrive, fine! Otherwise, these few suggestions may be of help:

Note whether the beans have a moist or wet appearance.

Feel the string to see how tight it is. As the beans lose their excess moisture, the string becomes looser. A clever salesman may remove a few beans from the bundle to accomplish the same thing, so

Open the bundle and examine the beans on the inside; if there is any excess of moisture, it will have collected on the surface of these, due to the heat generated inside the bundle.



Plate 5

A splendid example of natural crystallization. Note that the crystals of vanillin (which are of the "feather" or needle type) extend down deep into the ridges and furrows of the beans. Observe also, the tiny black particles of oleoresin which have escaped through numerous splits in the surfaces of the beans
M. C. Staff Photo

Crystallization

The chief significance of crystallization is that it guarantees the beans to be well-cured and free of surplus moisture. The crystallization takes place as the moisture leaves the beans, and since it is this moisture which causes mould, a well-crystallized bean will seldom mould, but will stay sweet and sound indefinitely so long as it is given ordinary care.

It is said that Mexicans are seldom crystallized, probably due to the lower vanillin content.

Because the trade has erroneously come to regard crystallization as an absolute criterion of value, various methods have been employed to simulate natural crystallization by unnatural or artificial means. The fact that so many customers have demanded crystallized beans has elevated one of these subterfuge methods to the dignity of a regular process. It has been found that a brief oven treatment (brief enough to insure against the loss of too much moisture) will grow crystals on almost anything short of golf balls, so if you insist upon crystallized vanilla, it is a simple matter to oblige.

If the crystals of vanillin are just on the

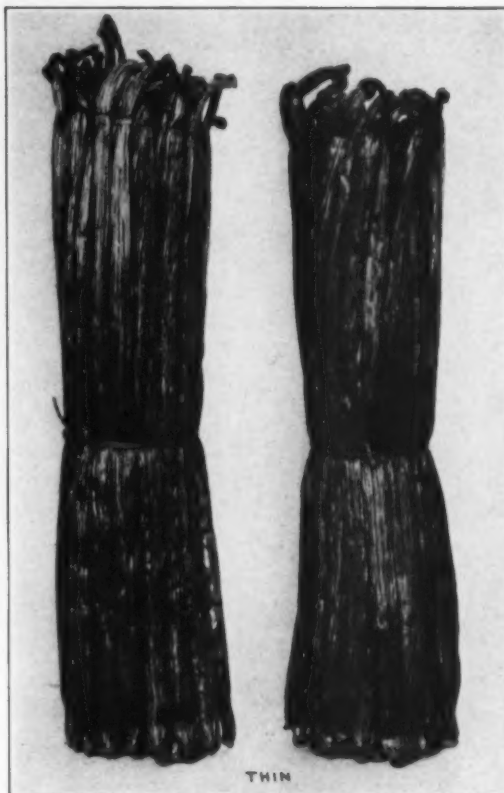


Plate 6

Long, perfect beans, but too thin-looking to be classed as "firsts." These beans have dried out considerably and have begun to crystallize. Compare these Bourbon "seconds" with the full, meaty beans in Plate 1
Staff Photo

outer or flat surface of the bean, and not in the grooves and ridges, you may be quite sure that it is not natural crystallization.

In natural crystallization, the crystals appear to some extent inside the bundle as well as on the exterior. In oven—or forced crystallization, the heat does not penetrate through to the center of the bundle and hence no crystals will be found inside. Of the two types of vanillin crystals, the feather or needle type and the sandy or plate type, the latter is the more complete crystal and is probably slower to form. Consequently, the presence of plate crystals inside the bundle is probably pretty good evidence that the crystallization took place in the natural way.

Low grade beans are sometimes rolled in crystals of benzoic acid to imitate vanillin crystals, but the crystals do not lie perpendicular in the furrows of the bean as do the natural crystals.

(Continued on page 51)

WYMPUS' FIRST

For Foremen, Superintendents



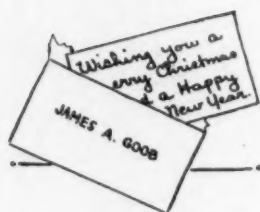
CANDY PRIMER

and Candy Makers of Importance!

(With an appropriate bow to H. I. Phillips.)

Bonus-Time and After

Lesson 1



What have we here?

A little New Year's remembrance from the Magnus Candy Company to its "loyal and faithful employees."

Looks as though it might be a bonus check.

3,679 candy makers thought so, too.

An extra week's pay, maybe?

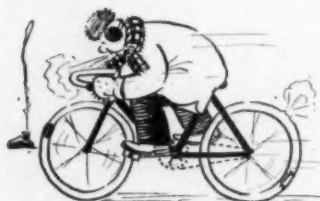
Don't be ridiculous; it's from Magnus, not Santa Claus.

Lesson 2

This is one of Magnus' loyal candy makers on his way to work.

What in the world happened to him?

Oh, he got a couple of drinks in him and insisted that the head waiter cash his for him.



Lesson 3

This is Ezra Mudd. Ezra is superintendent of the Magnus Candy Factory.

Did Ezra get his?

Well, he's been bragging for a long time that he was going to "roll to work" after the first of the year.

Lesson 4

Oh, see the jolly little group of candy makers!

What are they doing around the bulletin board?

They have just received a post card from Havana.

It is addressed to "the Boys, from your devoted president and friend, Opum Magnus."

What does it say?

"The bathing is lovely. Wish you were here."

The boys seem to be giving it an enthusiastic reception.

Enthusiastic isn't the word for it. Aleck, the foreman of the fondant sector, has just demanded

"MAGNUS ALIVE OR EZRA DEAD!"



The Old Gray Nightmare

(Continued from page 29)

when? Nowhere is there evident the continuous cooperative effort, the systematic comparing of notes and the careful assignment of problems which characterize the activities of other fields of research. Here every investigator plays a lone hand. Duplication of work and a repetition of previous failures are the order of the day. Are these wasted years of overlapping effort essential to twentieth century progress?

The candy industry has been inclined to take its research too much for granted. A large share of its most valuable development work has been contributed by outside agencies, such as the Federal departments and the suppliers of various raw materials and equipment. Both of these sources have been most generous in their assistance in working out candy problems, but they cannot take the place of organized cooperative research by the candy manufacturers themselves.

The government research departments can only devote a small fraction of their energies to problems which are peculiar to the candy industry. Suppliers will obviously withhold certain of their discoveries or color them in self interest. After all, you really would not expect them to divulge some secret which would jeopardize an existing market of theirs or make obso-

lete the manufacturing equipment into which they had sunk huge sums of money! Call this attitude anything you will, but it will still apply with peculiar emphasis to developments bearing on the chocolate graying problem. No, if systematic research is to be done, it will have to be done by the candy industry.

The graying of chocolate is the most serious handicap which has ever confronted the merchandiser of candy. The product must appear fresh in order to be saleable—heat and humidity notwithstanding. The solution of the graying problem will be a signal victory in the war on scrap. The returned goods evil will have lost much of its hold on the industry. One more "invisible" will have been erased from the candy manufacturer's cost sheet.

Are not these objectives of sufficient importance to warrant the endowment of a cooperative research fellowship at one of the universities? Glance around at a few of our neighboring industries and observe how the principle of group research is being employed to their immense profit, both collectively and individually. The N. C. A. advertising campaign has broken the ice for further cooperative activities in the candy industry. Is not Cooperative Research the next logical step to take toward bettering the status of the industry?

A. Savy Jeanjean—Baker Perkins Planning to Enter American Market This Year

ROBERT SAVY, Technical Director, A. Savy Jeanjean & Cie, of Paris, one of the foremost chocolate and confectionery equipment manufacturers of continental Europe, is making a tour among the leading factories of the industry in America studying market conditions and requirements.



Robert Savy

A. Savy Jeanjean & Cie., of Paris, established in 1830, known then as "Hermann"; is reputed to be the first builder of chocolate machinery. A number of these Hermann machines nearly a century old may still be found in some of the very old factories in America.

It will be of interest to the newer firms in the industry to know that

A. Savy Jeanjean were the originators and co-inventors of the Enrober. The manufacturing rights of this well known coating machine and the full line of Savy chocolate machinery have been licensed to the National Equipment Company of Springfield, Mass., for the past twenty-five years. These contracts expired in 1926 and we understand, have not been renewed.

For the past ten years Savy Jeanjean & Cie and Baker Perkins Co., of London, have been working under a cooperative arrangement by which they have pooled their technical, research and sales activities with very satisfactory results to their trade. We understand some very interesting developments in equipment have been made by these affiliated firms of important significance to the American trade.

The associated American company, Baker Perkins Company, Inc., with factory at Saginaw, Mich., and with sales offices throughout the United States, are well known in the biscuit and bread trades. For years they have made a complete line of equipment for the baking industries and having enlarged their manufacturing facilities at Saginaw, are about to enter the chocolate

and confectionery machinery business in America in conjunction with Messrs. Savy, Jeanjean, & Cie. In doing this the American Baker Perkins Company will be following the same policy as the English Company, who have supplied equipment to the bread, biscuit, chocolate and confectionery trades for many years.

Their background of experience and high reputation as production engineers precedes their advent into the American market and assures them a favorable reception into this industry.

A. F. Miller with Baker Perkins

ATHUR F. MILLER, who has represented John Werner & Sons of Rochester, N. Y., for past twelve years, is now associated with Baker Perkins Company and will represent them in conjunction with A. Savy Jeanjean & Cie of Paris, to the manufacturers of chocolate and confectionery.



A. F. Miller

Mr. Miller expects to sail for Europe in a few weeks to visit the home offices and the works in Paris and London, returning shortly before the N. C. A. convention and exposition in Chicago in May.

Mr. Miller has made his headquarters at Alamac Hotel, New York City, for the past five years, but will be located at the general sales offices of Baker Perkins Co., 250 Park avenue, New York, after his return from Europe.

The Baker Perkins Co., Ltd., of London and their associated American company are the largest builders of chocolate and confectionery and baking machinery in the world; and now that they are allied with Savy Jeanjean & Cie of Paris who are the leading manufacturers of chocolate and candy equipment in continental Europe the news of their coming into the American market has an important significance to this industry.

The appointment of Mr. Miller on their sales staff is a well deserved recognition of his ability and good standing in the trade. His many friends in the candy and supply field wish him much success in his new connection.

1,640,052. Candy Package. Andrew Olsen, Jr., San Francisco, Calif. Filed Dec. 21, 1925. Serial No. 76,704. 3 Claims. (Cl. 206-44.)



ent over a portion of its face surface only and translucent over the remaining portion and being sealed thereover.

3. A candy package for a bar of candy in which the face of the bar is covered with a wrapping perfectly transparent

Recent Visitors from England



J. B. Hillary

Mr. J. B. Hillary, Managing Director of Bramigk & Co., Limited, of London, and Mr. Adrian Anderson, Managing Director of Lesme, Ltd., Willesden, returned last month on the Olympic to England after spending a month visiting the confectionery and allied industries of America. Mr. Hillary was very much impressed with the American standard of factory production particularly our engineering ability to affect a continuous flow of goods in process at low cost. Mr. Hillary took back with him contracts for English representation for Huhn Manufacturing Company, Bentz Engineering Corporation, John Werner & Sons and Harry L. Friend.

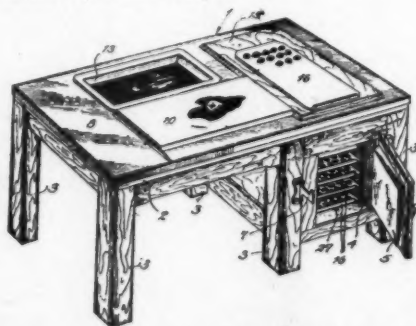
The firm of Bramigk & Company, Ltd., has been selling machinery and equipment to the chocolate and confectionery industry in the British Empire for fifty years. Mr. J. B. Hillary succeeds his father who was formerly owner of Carsons and who is now member of Parliament.

We were very glad to meet these two live representatives of our industry across the water and a warm welcome will await their return visit.



A. Anderson

1,638,041. Combined Chocolate Dipping Table and Cooler. Joe Korkames, Temple, Tex. Filed May 12, 1926. Serial No. 108,589. 9 Claims. (Cl. 62-31.)



1. A combined chocolate work table and cooler comprising a cabinet, a refrigerant compartment positioned within said cabinet, a receiving tray positioned above the said compartment and on which the finished chocolates are placed, and a closed tray-storage compartment within the cabinet and spaced from the refrigerant compartment to permit air to circulate in contact with the outsides of said compartments to maintain the air within the tray-storage compartment in a dry, cold condition.



HOLIDAY HARD CANDIES

THE following samples from the holiday hard candy lines of leading wholesale houses have been examined by the Clinic:

Purchase C-3

Xmas Mixed

Gloss—dull, almost entirely lacking.
Colors—good; except green—a trifle too bright.
Flavors—fair only; lemon, anise and peppermint very faint.
Condition—appeared to be grained.
Assortment—good; 14 kinds.
Size of pieces—good.
Size of Package—25-lb. pails, 300-lb. bbls.
Retail price—20c per lb.

Purchase M-3

American Mixed

Gloss—very good.
Colors—too light.
Flavors—weak.
Condition—fair; slightly dusty.
Assortment—10 kinds; too much red.
Size of Pieces—50% too large.
Size of Package—25-lb. pails, 300-lb. bbls.
Retail Price—19c per lb.

Purchase D-3

Xmas Mixed

Gloss—good.
Colors—good.
Flavors—good; lime and anise rather strong.

Condition—fair; small amount broken.
Assortment—excellent; 17 kinds.
Size of Pieces—too many large pieces.
Size of Package—25-lb. pails, 300-lb. bbls.
Retail Price—25c per lb.

Purchase N-3

Xmas Mixed

Gloss—almost entirely lacking.
Colors—fair.
Flavors—distinctly artificial.
Condition—box almost all one piece; batch probably cooked too low.
Assortment—9 kinds.
Size of Pieces—good.
Size of Package—5-lb. boxes.
Retail Price—20c lb.

The Clinic's Prescription

THESE candies have all been taken from one price range (19c to 25c lb.) and exhibit varying degrees of excellence. Little fault could be found with the colors, indicating that more attention is being paid to this detail. However, flavors in this class of goods are noticeably below standard, being either synthetic in character or used too sparingly to impart sufficient flavor to the piece.

All of these samples were undoubtedly vacuum cooked. Getting all the glucose you can into the batch is all right up to a certain point, but after that, the loss in standing-up quality overbalances the economy in cost. After all, the difference between the price of sugar and the price of syrup on a dry basis is not nearly so great as it once was.

While I have frequently made these goods using 50-50, I would advise using 60% sugar and 40% glucose for best results. The cooking of this class of hard candy is very important since the goods must stand up under a great variety of conditions. They must not only be in first class condition when the retail man re-

ceives them, but they must remain in that condition after he opens the packages and spreads them around in his open windows and show cases.

R

The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Each month he picks up at random a number of samples of representative candies. This month it is holiday hard candy; next month it will be chocolate goods. Each sample represents a bona-fide purchase in the retail market, so that any one of these samples may be yours.

This series of frank criticisms on well-known, branded products, together with the practical "prescriptions" of our clinical expert, are exclusive features of the M. C.

The weather is supposed to be very good at this time of the year, but of course, it hasn't been, with the result that we have seen some miserable-looking hard candies. No manufacturer who expects to stay in the business and make a couple of dollars can

afford to take his seasons for granted.

It has been my own personal experience that the most satisfactory way to cook glucose goods is as follows:

Cook batch in vacuum to 275° to 280°; turn off all steam. Put on vacuum, 28 to 30 lbs. and "pull vacuum" for at least eight minutes. If you are making your goods ahead, pull vacuum ten minutes. Cooking the batch in this manner will give you a high-cooked batch that will stand up. With a little care in handling and packing your goods will retain their gloss and keep dry almost indefinitely.

If you are "loading up" the vacuum cooker and are employing a fat of some kind, do not use a soft fat but insist on the highest melting point obtainable.

The Clinic Diagnostician.

EDITOR'S NOTE—The Clinic will be glad to receive comments and suggestions from its readers—clients with respect to the improvement or enlargement of the scope of this service in order that it may attain a maximum degree of usefulness by imparting a sort of retail-consumer consciousness to the man at the slab.

Monthly Digest of Current Technical Literature

of direct or indirect relationship to the confectionery industry

Determination of Moisture by the Volatile Solvent Method. J. M. Jones and T. McLachlan. *Analyst* 52, 383-7 (1927). The method consists in placing the sample together with a little sand in a flask with some light liquid which is immiscible with water, boiling and condensing the distillate so that it falls in a graduated tube. The water falls to the bottom and its volume is determined. Gives good results with jam, honey, sugar, syrups, emulsions, butter, etc., which require a long time for oven drying.

The Polarimetric Determination of Sucrose in Sweetened Condensed Milk. H. D. Richmond. *Analyst* 52, 525-6 (1927). Comments on Harrison method. Recommends: (1) When diluting the condensed milk, allow solution to stand at 60° for at least 30 minutes. (2) Then cool to 10°, add the acid mercuric nitrate, mix and carry out polarization at as low a temperature as possible.

Gentian Violet Lactose Peptone Bile for the Detection of B. Coli in Milk. M. A. Kessler and J. C. Swenarton. *Journ. Bact.* 14, 47-53 (1927). Gas in this medium is a positive indication of B. Coli and needs no confirmation.

Determination of Sulphur Dioxide in Dried Fruits. James Miller. *Analyst* 52, 338, 1927. The time required for determining sulphur dioxide in dried fruits can be shortened by distilling hydrogen peroxide and titrating with 0.1 normal sodium hydroxide using methyl orange as indicator.

Cacao Butter Substitutes and Their Detection. A. W. Knapp, J. E. Moses and A. Melley. *Analyst* 52, 452-6 (1927). A discussion of the limitations of various methods for detecting coconut and palm kernel stearins in cacao butter.

Determination of Sulphur Dioxide in Foods. G. W. M. Williams (Reports on Public Health and Medical Subjects, No. 43, Ministry of Health, 56 pp., 1927). Discusses the various methods used and their errors. Calls particular attention to the fact that the last traces of Sulphur Dioxide are held by dried fruits very tenaciously, and evolved very slowly. Recommends distillation into hydrogen peroxide, and gravimetric determination as Barium Sulphate.

A Study of the Crystallization of Sucrose Solutions. J. Dedek and J. Novacek, *Kolloid Zeitung* 42, 163-7 (1927). In a study of the effect of colloids on the velocity of crystallization of sucrose, a method for measuring "crystallizability" was developed. Solutions containing 66 per cent of sucrose by weight are poured into uniform crystallizing dishes which are placed in a dessicator over calcium chloride at 20 degrees C. If solutions are carefully prepared, they do not crystallize. To induce crystallization, finely divided sucrose dust is blown into the dessicator to inoculate the solution.

The amount of sugar which crystallizes is independent of the number of seeding crystals which enter the solution. Pure solutions deposit a small number of large crystals, and impure solutions a large number of small crystals. The actual weight of sugar deposited is larger for pure solutions.

Colloidal impurities act by being absorbed on the minute sugar crystals, thus impairing their ability to grow, but in addition to this they act as protective colloids on the colloidal aggregates of sucrose molecules which are the precursors of crystal formation.

The Determination of Sugar in Chocolate. Wm. Muller Mitt. *Lebensm. Hyg.* 18, 296-9 (1927). Recommends the use of the sugar method of Von Fellenberg as given in *Lebensmittelbuch* 3, 1917.

A Method for the Saponification of Butter Fat for Determining the Reichart Meissl Number. George Spitzer and W. F. Epple, *Journ. Dairy Science* 10, 193-4 (1927). A method is described for determining the Reichart Meissl number in butter fat without the use of foreign substances. By the addition of KOH direct to the previously heated fat and heating in an electric oven 30 to 40 minutes to complete saponification. Advantages—speed, and reduction of CO₂ contamination to a minimum.

Patents

Extracting Pectin. D. R. Nanji; U. S. Patent 1,634,879. July 5, 1927. Apple pomace or other pectin containing material is treated with dilute solutions of salts such as ammonium tartrate, which render soluble substantially all the pectin present.

Flaked Food from Pecans. E. G. Hess. U. S. Patent 1,635,273. July 12, 1927.

THE SELECTION OF COCOA BEANS FOR CHOCOLATE MANUFACTURE

(Continued from page 37)

cannot be used in milk chocolate.

Bourbon—From Reunion Island. This cocoa consists of small, broad beans. The shell breaks off easily and is cinnamon brown in color, whereas the kernel is red-brown. The flavor is both sour and bitter. Because of this the cocoa cannot be used in the manufacture of coatings, and its use is confined to the manu-

facture of butter.

Samoa—Of the many South Sea Island types, Samoa is the best. The beans are egg-shaped, seldom flattened. The shell is easily removed and is brown in color. The kernel is dark brown on the inside, and light brown on the outside. The taste is slightly bitter. This bean is a particularly fortunate cross-breed

of the true cocoa tree (Criollo) and the Forastero variety. It is very useful in milk chocolate because of its light color and relatively mild flavor. Sometimes adulterated with cocoa from the New Hebrides and other South Sea Islands, in which case it is likely to have a distinctly acid character, rendering it unfit for its best purpose.

WHO GETS "LOT X?"

(Continued from page 45)

It is reported to be common practice in Marseilles to take Tahiti beans, dip them in a solution of boric acid and spread them out in front of a strong fan which causes the acid to crystallize out on the surface of the beans. This, too, is naturally a surface crystal and therefore readily detected from the genuine.

Blemishes, Etc.

Scabs, warts, and various other blemishes are caused either by the attacks of insects, or by rubbing against another bean or branch and becoming bruised. Prime qualities should contain a very minimum of these blemishes. A great many buyers mistake brand marks for warts. (See Plate 5.) If you examine closely the brand mark on a Bourbon bean, you will notice that it consists of a series of pin pricks worked into the form of a definite pattern or trademark. The purpose of these trade-marks is to deter would-be thieves by making it impossible to market the finished product without being apprehended.

In determining the percentage of defective beans in the bundle, look for the scabs

and warts inside as the bundles are frequently "faced." Also, notice whether there are any crooked or twisted beans in the bundles. Prime beans should be perfectly straight.

There should be no splits among prime beans. In the lower grades, to the extent that they are permissible, the splits should not extend over one-third the length of the pods.

* * *

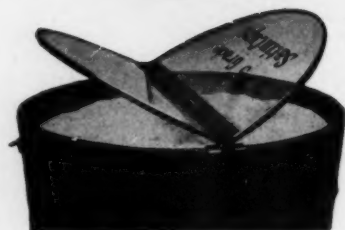
Lot X! Why, that's just trade slang for vanilla below par. Who gets Lot X? Perhaps the fellow who leaves it to an overworked and undermanned vanilla house to make his selection for him, will be the unfortunate one. The supply of prime lots is necessarily limited, anyway. But even we wise ones get careless occasionally and fail to check up on the grades delivered, so it may be you or I, brother,

WHO—
GET—
LOT—
X!

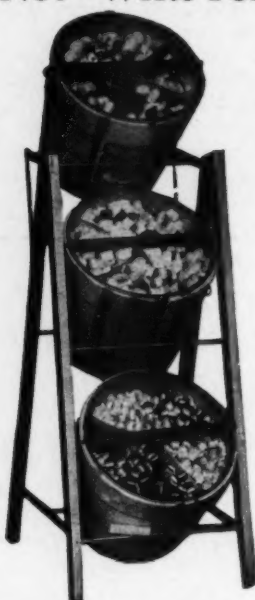


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